

DECLARATION UNDER 37 C.F.R. § 1.132	Application #	10/562,394
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	First Inventor	NORTON
	Art Unit	1794
	Examiner	King, Felicia C.
	Docket #	P07962US02/MP

Commissioner for Patents
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S I R:

I, Jeremy John Stagg, declare that:

1. I am the inventor of the above-identified U.S. patent application. I have been involved in all stages of the development of the subject matter claimed in the present application. I am aware of the pending claims in the present application, as well as the Office Action mailed June 9, 2009.

2. The present invention is directed to a novel discovery by the inventors, namely that consumer liking, i.e. taste preference, for a coffee product can be affected by the addition of a single naturally occurring component in coffee, linalool. In one particular embodiment in the present invention, the amount of linalool added is at least 25% higher than the amount of linalool naturally occurring in the whole bean or roast and ground coffee to which the linalool is added. In further alternative forms, the amount of linalool added is at least 50% or at least 100% more than the naturally occurring amount of linalool in whole bean or roast and ground coffee. In terms of concentration, in varying forms of the present method and the resulting coffee composition, the final concentration

of linalool in a whole bean or roast and ground coffee is at least 4,000, 6,000, 8,000, 10,000 or 16,000 $\mu\text{g/kg}$.

3. The concentration of, i.e. levels of, linalool in naturally occurring coffee vary from a minimal amount in Robusta blends of less than 100 $\mu\text{g/kg}$ to around 3,100 $\mu\text{g/kg}$ in some types of Arabica origin blends. See Appendix A to this declaration, which is a graph showing a comparison of linalool levels in various roast and ground origins. While the comparison graph in Appendix A shows nine different types of naturally occurring coffee blends, the nine examples are representative of all known coffee blends. Accordingly, other known coffee blends, not shown in the graph, would have a similar linalool concentration to those in the graph of Appendix A.

4. As noted in the Declaration under 37 C.F.R. § 1.132 of Mark Norton, submitted March 26, 2009 (hereinafter "Norton Declaration"), coffee itself is a complex product which includes many compounds. Of these compounds, only a few have previously been considered relevant to the taste and aroma in the final coffee beverage. When processing coffee beans with an intent of positively affecting the intensity of one flavor attribute, commonly there is a negative effect on at least one other flavor attribute. This can be linked to the chemistry of coffee flavor compounds which undergo chemical reactions, depending on the roast condition. Furthermore, due to different chemical reactions and roast conditions, it is unpredictable as to what the effect altering even a single flavor, such as adding a flavoring, will have on the final coffee taste.

5. Prior to the present invention, the extent to which the coffee component linalool would have on the flavor of coffee was unknown. Moreover, in the coffee art, linalool was not believed to be a "major" important coffee flavor driving consumer liking. See, e.g., Norton Declaration, ¶ 7, for a further discussion as to what was understood by

one of ordinary skill in the coffee art with regard to the lack of importance of linalool as a flavor driving consumer liking.

6. Further, as discussed in the Norton Declaration, ¶ 9, prior to the present invention, the addition of linalool was considered to produce an “undesirable note and disharmony with notes of a coffee roast.”

7. In view of what one of ordinary skill in the coffee art knew at the time of the present invention, one would not have added linalool to whole bean and/or roast and ground coffee to increase the levels of linalool to the extent claimed. Since linalool was not believed to drive liking or have a desirable flavor, one would not have increased the amount of linalool to be 25%, 50% and 100% greater than the amount of linalool naturally present. Further, one of ordinary skill in the coffee art would not have added linalool to whole bean or roast and ground coffee to result in the various coffee compositions, in accordance with the present disclosure, namely amounts of at least 6,000, 8,000, 10,000 or 16,000 µg/kg.

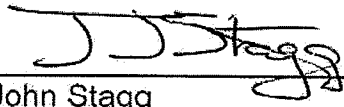
8. Further, even if one of ordinary skill in the art would have added linalool to whole bean or roast and ground coffee, one of ordinary skill in the art would not have known how much linalool to add to drive consumer liking and to produce a desirable beverage, let alone the amounts as claimed. Due to the coupling effect of flavor ingredients, and the number of different coffee components and flavor ingredients in coffee, one of ordinary skill in the art would not have had any reasonable expectation of success or would have been able to predict how much linalool to add to drive consumer liking.

9. Prior to the present invention, in the coffee art, linalool was believed to be in disharmony with the desirable notes in roast coffee (see, e.g., Norton Declaration, ¶ 9, and

its Appendix C, Ivor Flament, "Coffee Flavour Chemistry," Wiley Press, pp. 104-105), therefore, one would not have added linalool to arrive at the amounts claimed. For example, although the amount of linalool in Ethiopian Sidamo in the graph in Appendix A has around 3,100 µg/kg linalool, one of ordinary skill in the art would not have associated desirable coffee flavor due to the amount of linalool in the Ethiopian Sidamo blend. As noted, prior to the present invention, it was unknown that linalool drives consumer liking. Therefore, one of ordinary skill in the art would have had no reason to believe linalool was a flavor component which drives consumer liking. Moreover, even if one were to know to add linalool to coffee, one would not have known how much linalool to add to produce a desirable effect. In fact, if one were to add linalool based on what was known by one of ordinary skill in the coffee art, one would not have been led to add a significant amount of linalool due to the undesirable taste which may result from linalool as was known in the coffee art at the time of the present invention. Furthermore, due to the coupling effect of flavors, one would not necessarily know that the amount of linalool in Ethiopian Sidamo or any other coffee blend was a component which drove consumer liking. Accordingly, prior to the present invention, one of ordinary skill in the art would not have known how much linalool to add to a coffee blend to arrive at a desired coffee product, let alone the claimed amounts.

10. The undersigned declares further that all statements made herein of his knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 12 day of October, 2009.



Jeremy John Stagg

APPENDIX A

Comparison of Linalool levels of various R&G Origins

